

WHAT IS CLAIMED IS:

- 10033157-102601
- 1 1. A partition creating method for creating a partition in a storage  
2 device, the method comprising:  
3 limiting a size of a partition to be created to a size of  $m$  to  $n$ -th  
4 power, wherein  $m$  and  $n$  are natural numbers; and  
5 disposing the partition to be created at a position aligned with the  
6 size of the partition.
  - 1 2. A partition creating method for creating a partition in a storage  
2 device, the method comprising:  
3 partition creating request receiving processing of receiving a  
4 request to create a partition having a size of  $m$  to  $n$ -th power (requested  
5 size), where  $m$  and  $n$  are natural numbers; and  
6 partition disposing processing of referring to a table recording  
7 disposition information of partitions in the storage device, and when  
8 there is an empty region having a size equal to the requested size,  
9 disposing the partition in the empty region,  
10 when there is not an empty region having the size equal to the  
11 requested size, and if there is an empty region having a size  $mk$  times as  
12 large as the requested size, continuing to divide by  $m$  the empty region of  
13 the size  $mk$  times till the size of the divided empty region becomes equal  
14 to the requested size, and disposing the partition in the thus obtained

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15 region of a size equal to the requested size, where  $k$  is a natural number,

16 or

17 when there is neither the region having the size equal to the  
18 requested size nor the region having the size of  $mk$  times the requested  
19 size, disposing the partition in a region where a partition can be created,  
20 the region being a position that can be aligned with the requested size.

1 3. The partition creating method according to claim 2,

2 wherein said partition creating request receiving processing  
3 comprises receiving a request of creating a partition of an arbitrary size,  
4 and using, as the requested size, a size of  $m$  to the  $n$ -th power which size  
5 meets the size of the received partition and is represented by a minimum  
6  $n$ .

1 4. A partition deleting method of deleting a partition that is created in a  
2 storage device and has a size of  $m$  to  $n$ -th power, where  $m$  and  $n$  are  
3 natural numbers, the method comprising the steps of:

4 receiving information specifying a partition to be deleted; and

5 referring to a table recording disposition information concerning  
6 the partition in the storage device, and when a region before or after the  
7 partition to be deleted is an empty region, and if a region obtained by  
8 combining the empty region and the partition to be deleted can be  
9 aligned with a size obtained by totaling a size of the empty region and a  
10 size of the partition to be deleted, combining the empty region and a  
11 region having the partition deleted therefrom.

- 1 5. A computer program for causing a computer to execute:  
2 processing of receiving a request to create a partition having a size  
3 of  $m$  to  $n$ -th power, where  $m$  and  $n$  are natural numbers; and  
4 processing of creating a partition in a region on a storage device,  
5 where the partition of the received size can be created, the region being a  
6 position aligned with the received size.
- 1 6. A computer program for causing a computer to execute:  
2 partition creating request receiving processing of receiving a  
3 request to create a partition having a size of  $m$  to  $n$ -th power (requested  
4 size), where  $m$  and  $n$  are natural numbers; and  
5 partition disposing processing of referring to a table recording  
6 disposition information concerning a partition in a storage device, and  
7 when there is an empty region having a size equal to the requested size,  
8 disposing the partition in the empty region,  
9 when there is not an empty region having the size equal to the  
10 requested size, and if there is an empty region having a size  $mk$  times as  
11 large as the requested size, continuing to divide by  $m$  the empty region  
12 having the size  $mk$  times till the size of the divided empty region  
13 becomes equal to the requested size, and disposing the partition in the  
14 thus obtained region of a size equal to the requested size, where  $k$  is a  
15 natural number, and  
16 when there is neither the region having the size equal to the  
17 requested size nor the region having the size  $2k$  times as large as the  
18 requested size, disposing the partition in a region where a partition can

19 be created, the region being a position aligned with the requested size.

1 7. The computer program according to claim 6,  
2 wherein said partition creating request receiving processing  
3 comprises receiving a request of creating a partition of an arbitrary size,  
4 and using, as the requested size, a size of  $m$  to the  $n$ -th power which size  
5 meets the size of the received partition and is represented by a minimum  
6  $n$ .

1 8. A computer program for causing a computer to execute processing of  
2 deleting a partition that is created in a storage device and has a size of  $m$   
3 to  $n$ -th power, where  $m$  and  $n$  are natural numbers, the computer  
4 program being for causing the computer to execute:  
5 processing of receiving information specifying a partition to be  
6 deleted; and  
7 processing of referring to a table recording disposition  
8 information concerning the partition in the storage device, and when a  
9 region before or after the partition to be deleted is an empty region, and if  
10 a region obtained by combining the empty region and the partition to be  
11 deleted can be aligned with a size obtained by totaling a size of the empty  
12 region and a size of the partition to be deleted, combining the empty  
13 region and the region having the partition deleted therefrom.

1 9. An information processing apparatus, comprising:  
2 means for receiving a request to create a partition having a size of

3 m to n-th power, where m and n are natural numbers; and  
4 means for creating the partition in a region on a storage device,  
5 where the partition can be created by the received size, the region being a  
6 position aligned with the received size.

1 10. An information processing apparatus, comprising:

2 partition creating request receiving means for receiving a request  
3 to create a partition having a size of m to n-th power (requested size),  
4 where m and n are natural numbers; and

5 partition disposing means for referring to a table recording  
6 disposition information concerning a partition in a storage device, when  
7 there is an empty region of a size equal to the requested size, disposing  
8 the partition in the empty region, and

9 when there is not an empty region of the size equal to the  
10 requested size, and if there is an empty region having a size mk times as  
11 large as the requested size, continuing to divide by m the empty region  
12 having the size mk times till the size of the divided empty region  
13 becomes equal to the requested size, and disposing the partition in the  
14 thus obtained region having a size equal to the requested size, where k is  
15 a natural number, and

16 when there is neither the region having the size equal to the  
17 requested size nor the region having the size 2k times as large as the  
18 requested size, disposing the partition in a region where a partition can  
19 be created, the region being a position aligned with the requested size.

1 11. The information processing apparatus according to claim 10,  
 2 wherein said partition creating request receiving means receives a  
 3 request to create a partition of an arbitrary size, and uses, as the  
 4 requested size, a size of  $m$  to the  $n$ -th power which size meets the size of  
 5 the received partition and is represented by a minimum  $n$ .

1 12. An information processing apparatus including unit for deleting a  
 2 partition that is created on a storage device and has a size of  $m$  to  $n$ -th  
 3 power, where  $m$  and  $n$  are natural numbers, comprising:

4 means for receiving information for specifying a partition to be  
 5 deleted; and

6 means for referring to a table recording disposition information  
 7 concerning the partition in the storage device, and when a region before  
 8 or after the partition to be deleted is an empty region, and if a region  
 9 obtained by combining the empty region and the partition to be deleted is  
 10 aligned with a size obtained by totaling a size of the empty region and a  
 11 size of the partition to be deleted, combining the empty region and the  
 12 region having the partition deleted therefrom.

1 13. A computer-readable storage medium recorded with the computer  
 2 program according to any one of claims 5 to 8.

1 14. A storage device having a plurality of partitions created therein,  
 2 comprising a management region which manages a size and position of  
 3 each created partition,

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4        wherein said management region having size information and  
5 position information therein, the size information indicating that each  
6 created partition has a size of  $m$  to  $n$ -th power, wherein  $m$  and  $n$  are  
7 natural numbers, the position information indicating that each created  
8 partition is disposed at a position aligned with the size of the partition.

1    15. A storage device having a partition,  
2        wherein the partition is created by a partition creating method as  
3 defined in any one of Claims 1 to 3.

1    16. A method for recording data on a storage device,  
2        wherein the data manages a size and position of a partition, and  
3 the data includes size information and position information, the size  
4 information indicating that each created partition has a size of  $m$  to  $n$ -th  
5 power, wherein  $m$  and  $n$  are natural numbers, the position information  
6 indicating that each created partition is disposed at a position aligned  
7 with the size of the partition.